MINI PROJECTORS

Good For Road Warriors and Nuclear Families

If portability is high on your mind and you need to present to a small audience group, get a mini projector for yourself!

■ UMA BANSAL

Though mini projectors have evolved very recently, these have already started creating their own market. These pocket-size devices do away with the bulkiness and heaviness of conventional projectors, and allow you to give presentations on the go and watch movies from a USB with ease. They are portable in true sense, and many of them use the same adaptor as a notebook's.

These compact projectors come in various sizes, brightness, contrast ratio, connectivity options and convenience features. Some even free you from carrying your laptop along to make presentations.

However, because of their compactness, mini projectors come at a little price premium over regular projectors. Also, visual excellence is compromised as these generally have less brightness and contrast ratio.

Nevertheless, if portability is high on your mind, why wait? Get set to grab one.

Classification based on weight

Based on weight, projectors can be classified as follows:

- Pico: Quarter kg or less
- Nano-portable (palm): Up to 1 kg
- Micro portable: Up to 2.5 kg
- Ultra portable: Up to 5 kg
- Conventional: Above 5 kg

Of these, pico and palm projectors come under mini category.

Pico projectors are the size of a mobile phone but have a brightness of 10-30 ANSI lumens only (requiring complete darkness in the room) and give a very small screen size between 25.4 and 51 cm (10 and 20 inches). So these are suitable only for small-size projection.

Palm projectors, in comparison, have a brightness of as much as 200-300 ANSI lumens and give a screen size between 102 and 305 cm (40 and 120 inches). This makes them suitable for presentation and watching movies. LG HS201G and HX301G weigh about 800 gm each.

So if you want the convenience of a highly portable projector and a screen size of minimum 102 cm (40 inches), a palm projector is a good choice.

Moving to a bit heavier category, NEC's micro projectors weigh 1.7 kg but can project data from a USB memory device—a big advantage. These produce a brightness of 2300 lumens XGA to 3000 ANSI lumens XGA, and have inbuilt auto-focus and shutter for the lens. If you have to receive a phone call amid a home movie or presentation, just slide the cover of the lens to stop the audio and video. The series includes four models.

Ideal users

Mini projectors are best suited for roaming professionals as these are so thin, lightweight and compact that they can be easily accommodated in a

A mini projector is an ideal companion to a working couple as they can enjoy the movie downloaded into their laptop on a reasonably big screen effortlessly

notebook bag. You need not carry any extra peripheral for the projector.

Even for the home segment or the so-called corporate commercial space where a project leader gets into a small meeting room to make a presentation to a four-eight member team, one can have the luxury of a big-screen projection on the wall. As the audience size is small, brightness is small at 200 lumens. Conventional DLP projectors used in offices, on the other hand, have a brightness of 1500-2500 lumens. Projectors for some of the bigger board rooms or meeting rooms would even go beyond 3500 lumens. However, it's not a compromise because you will use the mini projector to present to a smaller group.

Even for homes, especially nuclear families, a mini projector is an ideal companion to the working couple as they can enjoy the movie downloaded into their laptop on a reasonably big screen.

Mini Projectors: At A Glance

- Smaller than conventional projectors
- Fit in your palm
- Usually, use LED as the light source instead of a traditional projection lamp
- Brightness is not as high as full-sized projectors, but still enough with up to 300 lumens
- Lower resolution than typical business or home projectors
- Most accept memory cards and USB
- Usually, have a composite video source
- Coming with HDMI and multimedia players nowadays
- Can be expensive

Projectors Weighing Below 500 gm

Public Soft's MP220

MP220 POCKET LED projector weighs just 200 gms. It is an ideal tool for office presentations and home cinema applications. MP220 is based on latest LCOS technology and can be connected to a PC, laptop, DVD player, TV or set-top box. It has inbuilt memory of 2GB, which is expandable to 32 GB with Micro SD card. Lamp life is more than 20,000 hours

Key Features

- Weight: 200 gm
- Brightness: ANSI >27 lumens
- Contrast ratio: 200:1
- Resolution: 800x600 pixels (SVGA)
- Lamp life: Over 20,000 hours
- Others: Media player that supports MPEG-4, mini USB 2.0, SD card reader, built-in speaker

Dell M109S

Weighing in 360 gm this groundbreaking pocket-sized projector lets you take the show on the road like never before. With brightness of 50 ANSI Lumens (max) and SVGA native resolution of 858×600, you will be able to empower yourself by delivering presentations in crisp text and vibrant colours in small group sharing, collaborative meetings, or even impromptu meetings, with ease.

Key Features

- Weight: 360 gm
- Brightness: 50 ANSI lumens (max)
- Contrast ratio: 800:1 (full on/full off)
- Resolution: 858x600 pixels (SVGA)
- Lamp life: 10,000 hours
- Others: Multi-input cable which connects to laptops, desktops, DVD players and gaming consoles, password-protection, auto keystone correction

Technologies available

Projector technologies could be broadly categorised into liquid-crystal display (LCD) and digital light processing (DLP). In terms of professional technology, until four to five years ago, LCD technology dominated the market. But LCD projectors were power guzzlers and therefore had to have a larger form factor to allow more room for cooling. And with time, their colour fidelity (richness) decayed. That is, after two-three years of use, red would not be pure red.

But DLP, which is the most predominantly growing technology today, is digital and therefore able to shrink so many things in a small form factor and consumes much less power. Also, there is no colour decay with time.

LED technology is new. It is a filter-less design giving almost 10-15 times the average life of the product. LED-based DLP projectors use LEDs as the light source to produce images. Traditional DLP and competing projector technologies use a lamp as the light source. An LED-based projector consumes less power than a lamp-based model, and runs cooler. It is quieter too, as it doesn't need fans inside to cool down the lamp. Also, LED-based projectors are ergonomically much more user-friendly.

However, LED projectors have the limitation of rendering brightness. A few years ago, these had a brightness of up to 100 lumens. Today, their brightness level has increased to 200-300 lumens.

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Palm projectors are DLP-based LED projectors. LED palm projectors have a lamp life of about 30,000 hours and are slightly expensive than normal projectors.

Liquid crystal on silicon (LCoS) is an emerging technology. It's a hybrid between LCD and DLP technologies and has native resolution starting at SXGA. However, it is expensive at the moment. So for the next two-three years, DLP projectors are going to dominate.

Things to look for

When choosing a mini projector, there are many things to consider. Some are listed below:

Portability. As a pico projector is about the size of a cellphone, it will easily fit in your shirt's pocket. If you need to carry a projector all the time, a pico projector is small and light enough for the purpose. A palm projector is recommended if you will be carrying the projector only when you need it.

Projectors Weighing Below 1 kg

Acer K11

Price ₹ 30,499 plus taxes

The pocket-size Acer K11 is claimed to be the world's smallest projector to offer 200 lumens of brightness. It is so small that you can project vibrant visuals from one hand. You can simply carry the portable projector along with a USB drive or SD card to display whatever you want to share anywhere without a laptop PC or video player. It enables high-quality enjoyment of portable entertainment by projecting videos/audio and photos from an iPod/iPhone using an appropriate Apple-certified AV adaptor.

Key Features

- Weight: 610 gm
- Brightness: 200 ANSI lumens
- Contrast Ratio: 2000:1
- Resolution: Native SVGA (858×600), maximum SXGA (1280×1024), WXGA+ (1440×900)
- Lamp life: LED life 20,000 hours
- Others: Keystone correction, internal speaker, HDMI port, multi-PC connectivity, etc

BenQ GP1

Price ₹ 36,600

BenQ's GP1 mini projector is based on 3LED technology and as an integrated USB video reader. It weighs 640 gm and is packed with advanced features to effortlessly run multimedia content. Effortless big-screen fun from home to office to anywhere is enhanced by superb picture quality, sound and convenience: 120% NTSC, 100 ANSI lumens powered by digital LED lighting, wall-colour correction, built-in 2W speaker, 20,000+ hours light life, iPod/iPhone dock (optional), instant on/off and tripod compatibility.

Key Features

- Weight: 640 gm
- Brightness: 100 ANSI lumens
- Contrast Ratio: 2000:1 (full on/full off)
- Native Resolution: SVGA (858×600)
- Lamp Life: 20,000+ hours
- Others: Auto keystone correction, USB reader, wall-colour correction, auto search, built-in 2W speaker

LG HX301G

Price ₹ 71,000

The HX301G projector by LG is a compact, lightweight LED projector, designed for both home entertainment and business purpose. It supports DivX HD, MP3 and JPEG files through Direct USB and HDMI input, making it ideal for home entertainment. With File Viewer option, you can present your Word documents, Excel sheets and PowerPoint presentations directly through the USB input.

Key Features

- Weight: 780 gm
- Brightness: 270 ANSI lumens
- Contrast ratio: 2000:1 (full on/full off)
- Resolution: XGA (1024x768)
- Lamp Life High-Brightness (hours): 30,000
- Others: Picture still, digital keystone correction, expert control, auto power off, quick power on/off

Projectors Weighing Above 1 kg

Dell M209X

This smartly designed, 1.18kg projector is highly portable, while still delivering stunning image quality and comprehensive functionality. With quick set-up and easy operation, the Dell M209X is perfect for the road warrior. The full-featured remote provides easy, hands-off control and a built-in laser pointer for more efficient presentations.

Key Features

- Weight: 1.18 kg
- Brightness: 2000 lumens (max)
- Resolution: 1024×768 XGA
- Contrast Ratio: 1800:1 (full on/full off)
- Lamp life: Up to 5000 hours
- Others: Multiple connectivity options to enhance the visual experience, including VGA analogue, digital HDMI, USB and audio input/output ports, auto keystone correction

NEC NP64

Price
₹ 69,555 plus taxes

The NEC NP64 ultra-portable projector comes with sufficient brightness for large-screen presentations in large conference rooms. Its auto features make setup quick and easy. Also, you can project image data saved on a USB memory device using the viewer function of the projector.

Key Features

- Weight: 1.7 kg
- Resolution: 1024×768 pixels
- Light Output: 3000 ANSI lumens with eco mode off, approx. 75 per cent of Eco mode off with eco mode on
- Contrast ratio: 1600:1
- Lamp life (Eco mode on/Eco mode off): 3500 hours/2500 hours
- Others: Bluetooth, USB 2.0, keystone correction, etc

If you are highly mobile, check whether the projector can read your files directly from a USB disk, eliminating the need to carry a PC along. If so, you will want to go for it even if it is bigger than a lighter projector that won't work without your computer.

Brightness. The brightness of a projector is measured in terms of ANSI lumens. Generally, brighter is always better for home theatre projectors. The projector is required to produce just enough light to fill the screen with good contrast, but not so bright that it causes eye fatigue when viewed for long.

But for mini projectors, you need not go by this rule. The brightness for mini projectors (pico and palm) ranges from 10 ANSI lumens to 200-300 ANSI lumens. That is, they are not bright enough to be too bright under any lighting condition for any reasonable-size image. So buy a mini projector with a high brightness level.

To enjoy more than 152.4cm (60-inch) screen size, go for a palm-size projector with minimum 200 ANSI lumens. LG's palm-size projectors HS201G and HX301G have brightness of 200 ANSI lumens SVGA and 270 ANSI lumens XGA, respectively.

Resolution. Ensure that the projector can accept the signal you will send to it. So match the projector's resolution with that of the device you intend to use it with. The projector resolution is categorised like

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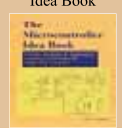
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computer monitors'. Consider the type of presentations you'll make using it. For PowerPoint slides and simple clear graphics, choose SVGA. For spreadsheets and more detailed graphics, choose XGA. For large screens too, choose XGA.

Mini projectors don't offer native widescreen resolutions. Also, these are usually limited in the range of resolutions that they can accept and then scale down to their native resolution.

Contrast ratio. Contrast ratio is the ratio between the brightest and darkest areas of the image. A higher contrast ratio means sharper and crisper pictures. But given the low brightness levels of mini projectors, the contrast ratio for them matters even less than for conventional projectors.

Connectivity. Check out the connectivity to various devices like the monitor, desktop PC and DVD player. Explore what and how many ports are available. Also check USB and wireless connectivity (can you wirelessly connect a PC to the projector?).

A pico projector has basic connectivity options, whereas palm projectors will have connectivity ports for laptop/PC, DTH, home theatre, gaming devices, etc.

Audio capabilities. If you will use the projector for audio-visual presentations or watching movies, ensure that the audio is both high-quality and loud enough to meet your needs. If you move a lot, a built-in speaker system is recommended. In case you need extra loudness, you should be able to connect additional speakers to the projector. Also look for audio inputs

Lamp. Check out how many hours of viewing the projector's lamp can last. The longer it is, the less frequently you need to replace it.

Other features. Auto features will help you save on time and get started with your presentation or home movies right away. Auto focus is very helpful. Otherwise, you will spend a lot of time adjusting the focus. Trapezoidal correction is another feature to look for. The projected image at times is trapezoidal in shape. The projector should have the capability to correct that. Wall colour can differ from location to location, so look out for wall-colour correction. A file viewer option would allow you to view Microsoft PowerPoint, Excel and Word files directly from the projector through the USB port.

Final word

Before buying a mini projector, consider the usage scenario. If you want a complete home theatre experience and have a large drawing room suitable for that, you will not be satisfied with the performance of a mini projector. And if you make up your mind to buy one, buy only from the right source after ensuring good after-sales support. ●

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